

What is claimed is:

1. A hydraulic power steering system for use in a vehicle to eliminate energy waste when power assist is not required comprising:
  - a pulley powered by a crankshaft in said vehicle;
  - a clutch operably connected to said pulley;
  - a hydraulic pump operably connected to said clutch; and
  - controlling means for engaging and disengaging said clutch with said pulley and said hydraulic pump to provide hydraulic power to said system.
2. The hydraulic steering system of claim 1 wherein said steering means is a power assisted steering system.
3. The system of claim 1 wherein said controlling means is a hysteresis pressure switch.
4. The system of claim 3 further comprising an electrical power source operably connected to said hysteresis pressure switch.
5. The system of claim 4 wherein said electrical power source is a vehicle ignition control system.
6. The system of claim 1 wherein said controlling means is a microprocessor.
7. The system of claim 6 wherein said microprocessor receives input from at least one of a pressure sensor, steering wheel rotation sensor and vehicle speed sensor.
8. The system of claim 3 further including a hydraulic accumulator operably connected to said hysteresis pressure switch to insure that hydraulic power is available when said clutch is disengaged.
9. The system of claim 1 further including a check valve operably connected to said hydraulic pump to maintain hydraulic pressure in said hydraulic accumulator when said clutch is disengaged.
10. The system of claim 7 further including a reservoir containing hydraulic fluid wherein said reservoir is operably connected to said power steering pump.
11. The system of claim 8 further including a rotary actuated control valve operably connected to said reservoir and to said check valve.
12. The system of claim 9 wherein said rotary actuated control valve is provided with a closed center to maintain pressure in said hydraulic accumulator until needed..
13. The system of claim 9 further including a power assist steering cylinder operably connected to said rotary actuated proportional valve and to a steering rack to provide power assist steering for said vehicle.
14. The system of claim 8 wherein said hydraulic accumulator dampens transients in the hydraulic system such that the need for hydraulic noise reducing components are not required.

15. A hydraulic power steering system for use in a vehicle to eliminate energy waste when power assist is not required comprising:
- a pulley powered by a crankshaft in said vehicle;
  - a clutch operably connected to said pulley;
  - a hydraulic pump operably connected to said clutch;
  - a hysteresis pressure sensor for engaging and disengaging said clutch with said pulley and said hydraulic pump to provide hydraulic power to said system.
  - a vehicle ignition power source;
  - a hydraulic accumulator operably connected to said hysteresis pressure switch to insure that hydraulic power is available when said clutch is disengaged;
  - a check valve operably connected to said hydraulic pump to maintain hydraulic pressure in said hydraulic accumulator when said clutch is disengaged;
  - a reservoir containing hydraulic fluid, said reservoir being operably connected to said power steering pump;
  - a rotary actuated control valve operably connected to said reservoir and to said check valve; and
  - a power assist steering cylinder operably connected to said rotary actuated proportional valve and to a steering rack to provide power assist steering to said vehicle.
16. The system of claim 15 wherein said rotary actuated control valve is provided with a closed center to maintain pressure in said hydraulic accumulator until needed.
17. The system of claim 15 wherein said reservoir has a hydraulic fluid capacity equal to the difference between the maximum charged amount of hydraulic fluid and the minimum discharged amount of hydraulic fluid in the hydraulic accumulator.
18. A hydraulic power steering system for use in a vehicle to eliminate energy waste when power assist is not required comprising:
- a pulley powered by a crankshaft in said vehicle;
  - a clutch operably connected to said pulley;
  - a hydraulic pump operably connected to said clutch;
  - a microprocessor for engaging and disengaging said clutch with said pulley and said hydraulic pump to provide hydraulic power to said system wherein said microprocessor receives input from at least one of a pressure sensor, steering wheel rotation sensor and vehicle speed sensor;
  - a vehicle ignition power source;
  - a hydraulic accumulator operably connected to said hysteresis pressure switch to insure that hydraulic power is available when said clutch is disengaged;
  - a check valve operably connected to said hydraulic pump to maintain hydraulic pressure in said hydraulic accumulator when said clutch is disengaged;
  - a reservoir containing hydraulic fluid, said reservoir being operably connected to said

power steering pump;

a rotary actuated control valve operably connected to said reservoir and to said check valve; and

a power assist steering cylinder operably connected to said rotary actuated proportional valve and to a steering rack to provide power assist steering to said vehicle.

19. The system of claim 18 wherein said rotary actuated control valve is provided with a closed center to maintain pressure in said hydraulic accumulator until needed.

20. The system of claim 18 wherein said reservoir has a hydraulic fluid capacity equal to the difference between the maximum charged amount of hydraulic fluid and the minimum discharged amount of hydraulic fluid in the hydraulic accumulator.

2004431 04400